## REMARKS

Claims 10-16 are presented for consideration, with Claims 10, 15 and 16 being independent. The independent claims have been amended to further clarify the features of Applicants' invention. Support for the claim amendments can be found, for example, on page 12, line 12, *et seq.*,of the specification and element 506 of Figure 5. As such, no new matter has been added.

Claims 10 and 13-16 stand rejected under 35 U.S.C. §103 as allegedly being obvious over Williamson et al. (U.S. Patent Application Publication No. 2004/0104935) in view of Latham (U.S. Patent No. 5,803,738). In addition, Claims 11 and 12 are rejected as allegedly being obvious over those citations and further in view of the Lescinsky publication ("Interactive Scene Manipulation in the Virtue3D System"). These rejections are respectfully traversed.

Claim 10 of Applicants' invention relates to an image processing apparatus for compositing an image of a virtual object and an image of a physical space to generate a mixed reality image and causing an HMD to display the mixed reality image. The apparatus includes a database which holds 3D CG data and scene graph data, wherein the 3D CG rendering data contains data representing geographical shape and color of the virtual object, texture data, and data representing the position and orientation of the virtual object, and wherein the scene graph data is data in which the 3D CG rendering data is hierarchically managed on the basis of the parent-child relationship between components of the virtual object, an image capturing unit which is attached to the HMD and captures the image of the physical space, a first measurement unit which measures a position and orientation of the HMD, and an object manipulation unit

which is used by a user wearing the HMD in order to operate a position and orientation of the virtual object. In addition, a second measurement unit measures a position and orientation of the object manipulation unit, an operation panel which can be operated by the user, arranged at a position in the physical space within a viewing field of said image capturing unit attached to the HMD, displays an operation panel image which is used for editing the virtual object, and contains a region for hierarchically displaying information about each of the components in accordance with the scene graph data held in the database, and is capable of receiving a user instruction of editing the virtual object input by the user, and an operation panel image generation unit generates the operation panel image by using the data held in the database and outputs the generated operation panel image to the operation panel. A rendering unit updates the data held in the database according to the user instruction received via the operation panel and the measurement result of the second measurement unit, and renders, by using the updated data, the image of the virtual object according to the measurement results of the first and second measuring units, and a composition unit composites the image of the rendered virtual object and the captured image of the physical space to generate the mixed reality image. Finally, a HMD displays the mixed reality image generated by the composition unit.

Independent Claims 15 and 16 incorporate the features of Claim 10 but are directed to a method and a computer readable storage medium, respectively. The amended claims now recite, among other features, "a database which holds 3D CG data and scene graph data, wherein the 3D CG rendering data contains data representing geographical shape and color of the virtual object, texture data, and data representing the position and orientation of the virtual object, and

wherein the scene graph data is data in which the 3D CG rendering data is hierarchically managed on the basis of the parent-child relationship between components of the virtual object" and an operation panel that "displays an operation panel image which is used for editing the virtual object and contains a region for hierarchically displaying information about each of the components in accordance with the scene graph data held in the database, and is capable of receiving a user instruction of editing the virtual object input by the user." Applicants submit that none of the cited documents discloses these features.

The Williamson et al. publication is relied on to teach, *inter alia*, a database that holds data used for generating the image of the virtual object (See page 3 of the Office Action) and an operational panel (See page 3 of the Office Action). The Williamson et al. publication, however, does not teach or suggest, the a database which holds 3D CG data and scene graph data, wherein the 3D CG rendering data contains data representing geographical shape and color of the virtual object, texture data, and data representing the position and orientation of the virtual object, and wherein the scene graph data is data in which the 3D CG rendering data is hierarchically managed on the basis of the parent-child relationship between components of the virtual object. The final Office Action states, on page 3, that the Williamson et al. publication does not teach, among other things, an operation panel which can be operated by a user, arranged at a position in the physical space within a viewing field of an image capturing unit attached to a HMD. Applicants further submit that the Williamson et al. publication does not teach or suggest the operational panel that displays an operation panel image which is used for editing the virtual object and contains a region for hierarchically displaying information about each of the

components in accordance with the scene graph data held in the database, and is capable of receiving a user instruction of editing the virtual object input by the user, as set forth in amended Claim 10.

The Latham patent is relied on to teach, on page 4 of the final Office Action, an operation panel which can be operated by a user. In the Advisory Action, the Examiner states that Latham presents a physical control panel in the physical space with is view by the user via the HMD image capture device, referring to Fig. 1. Latham teaches a system for simulating the forces associated with touching objects in a virtual reality simulator system. Applicant submits, however, that Latham does not teach a operation panel, which displays an operation panel image which is used for editing a virtual object. In Figure 1, Latham depicts a image 10 of an operation panel to a user wearing a HMD 20. This image 10, however, is not presented on an operation panel that his part of the physical space. Further, image 10 is not an operation panel image which is used for editing a virtual object. An panel 12 is positioned to mirror the movement on the hand. This panel 12 does not include a display panel for displaying operation panel image which is used for editing a virtual object, and cannot be arranged at a position in the physical space within a viewing field of an image capturing unit attached to a HMD, as Latham does not teach an image capturing unit attached to a HMD. As such, Applicants submit that the Latham does not teach or suggest an operation panel, which displays an operation panel image which is used for editing a virtual object, arranged at a position in the physical space within a viewing field of an image capturing unit attached to a HMD, as previously set forth in Claim 10.

Further, the Latham patent also fails to overcome the deficiencies of the Williamson et al. publication discussed above, with regards to amended Claim 10. That is, in contrast to Applicants' claimed invention, Latham does not teach or suggest, among other features, a database holding the claimed data, along with the operation panel that displays the claimed operational panel image, as recited in Claim 10.

Accordingly, without conceding the propriety of combining Williamson et al. and Latham, such a combination still fails to teach or suggest Applicants' claimed invention. The tertiary citation to the Lescinsky publication relates to interactive scene manipulation and was relied on for teaching the generation of a image of a virtual object based on 3D CAD data. The Lescinsky publication fails, however, to compensate for the deficiencies in Williamson et al. and Latham as discussed above.

Claims 15 and 16 relate to an image processing method and a computer readable storage medium, respectively, and correspond to Claim 10. These claims are thus also submitted to be patentable over the art discussed above.

For the foregoing reasons, Applicant respectfully submits that each of independent claims 10, 15 and 16 is patentable over the applied art of record. In addition, dependent Claims 11-14 set forth additional features of Applicants' invention. Independent consideration of the dependent claims is respectfully requested. Therefore, reconsideration and withdrawal of the rejection of Claims 10 and 13-16 under 35 U.S.C. §103 is respectfully requested.

Applicant respectfully submits that all outstanding matters in the above application have been addressed and that this application is in condition for allowance. Favorable

reconsideration and early passage to issue of the above application is respectfully sought.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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